CHAPTER 6

VALIDATION OF CONCEPTUAL MODEL AND HYPOTHESIS*

6.1 INTRODUCTION

The synthesis of the learning issues is discussed in this chapter in the context of dynamic business environment. The results and findings of the research study are summarized and some suggestions are made for institutes, particularly for students who want to practice ICT within the institutes. The support for the results/findings of the study from recent published literature is also presented. Further, significant research contributions, implications for researchers and practitioners, limitations of the study, and the possible directions for the future learning are outlined.

6.2 ANALYSIS OF MAJOR FINDINGS

The findings of different components of the research, i.e. questionnaire survey and case study analysis are synthesized according to the research objectives. The main research objective was to identify the role of ICT in enhancing learning outcomes. Accordingly, a summary of the findings are presented here, reflecting upon the achievement of the research objectives. The study brings out that the framework for learning from ICT should be evolved keeping in view the goals and the contextual factors namely supportive environmental factors. Based on the research findings, important areas have been identified which are discussed in the following sections.

6.3 RELATIONSHIPS OF KEY VARIABLES

The relationships of key research variables have been established by both the questionnaire survey and the case studies and the research findings on this front are summarized as follows:

The coefficient of determination (R square) indicates that all these ten variables together explain 66.6 per cent variance in Education. Among the ten variables, micro variable Periodical Study material Circulation (ID2) is the strongest predictor of dependent variable Education. The regression coefficient ‘Beta’ shows the degree of association between these micro variables and Education. Using these three macro variables as the predictors, the
effort is reduced to 63.7 per cent (adjusted R square). Here, the linear relationship is highly significant as the associated p-value is much less than 0.05.

6.4 LEARNING OUTCOMES AS DEPENDENT VARIABLE

The macro variable analysis with the step-wise regression model has been concluded in three steps, as three macro variables namely Intelligence Dissemination, Intelligence Generation and Learning Discretion have entered the regression model (Table 6.5 (a)). This is explained as Learning outcomes requires generation as well as dissemination of student information throughout the institutes. Moreover, learning outcomes cannot be developed without providing autonomy to the students. Hence, Learning Discretion has emerged as an important predictor of Learning outcomes. The model summary of Learning outcomes is given in Table 6.1. Figure 6.1 shows the validated model for variables as predictors of Learning outcomes of ICT implementation.

Table 6.1: Regression Model Summary for Learning outcomes as Dependent Variable

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.851(a)</td>
<td>.725</td>
<td>.679</td>
<td>.70563</td>
</tr>
</tbody>
</table>

a) Predictors: (Constant), ICT helps teams in communicating, sharing information, and providing better feedback., Lack of technical knowledge impacts student's access to ICT., Online modules help students to perform better., ICT helps in changing education and business administration., ICT enhances student's access to education (online modules), ICT help by facilitating the acquisition of basic skills., ICT help in enhancing the student's motivation and engagement.
6.4.1 Variables as Predictors of Learning outcomes

The stepwise regression analysis concluded in one step (Table 6.1). There are nine micro variables namely ICT helps teams in communicating, sharing information, and providing better feedback., Lack of technical knowledge impacts student's access to ICT., Online modules help students to perform better., ICT helps in changing education and business administration., ICT enhances student's access to education (online modules), ICT help by facilitating the acquisition of basic skills., ICT help in enhancing the student's motivation and engagement, which have entered the regression analysis concluded in one step.

![Diagram of the validated model for micro variables as predictors of learning outcomes]

Figure 6.1: Validated Model for Macro Variables as Predictors of Learning outcomes

Each of these micro variables is hypothesized to be predictor of ICT Learning outcomes. The regression analysis model summary shows that the micro variables namely ICT helps teams in communicating, sharing information, and providing better feedback., Lack of technical knowledge impacts student's access to ICT., Online modules help students to perform better., ICT helps in changing education and business administration., ICT enhances student's access to education (online modules), ICT help by facilitating the
acquisition of basic skills., ICT help in enhancing the student's motivation and engagement are predictors of Learning outcomes through distance education mode.

6.4.2 Discussion on Hypotheses Testing

This section study provides the summary of regression between institutional dimension, acting as independent variables, and the ICT outcomes, acting as dependent variables. The results study material in Tables 6.2, show that among the most important predictors of ICT Outcomes are ICT helps teams in communicating, sharing information, and providing better feedback., Lack of technical knowledge impacts student's access to ICT., Online modules help students to perform better., ICT helps in changing education and business administration., ICT enhances student's access to education (online modules). This further validates the necessity of having proper processes for dissemination of information at all levels through the usage of ICT.

Table 6.2: Regression Analysis Summary of ICT’s Learning outcomes

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables</th>
<th>R Squares</th>
<th>Hypotheses Accepted</th>
<th>Hypotheses Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning outcomes</td>
<td>ID2, MS4, ID5, IG1, IG4</td>
<td>.478</td>
<td>H ID2, H ID3, H ID4, H ID6, H IDG1 to H IDG9, H IWD1 to H IWD8, H IMS2, H IMS3, H IMS5, H IMS6</td>
<td></td>
</tr>
</tbody>
</table>

Note: The relationships against hypotheses codes are given in Section 3.4

The positive nature of the relationship points out the fact that the students should be given the autonomy in terms of abilities and selection of study material and access to online training modules to enhance education. Also, it is important to have management support in terms of financial support for ICT activities.
6.5 CONCLUSION

The present study shows that ICT helps in enhancing teaching learning environment for the distance education students. The study further also proves and disproves the hypothesis proposed. These associations have been explained in this chapter giving the model of implementation a framework. The chapter also emphasizes on the implementation issues which may come during the ICT practice.